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ZIWET'S MECHANICS.*

The schools of engineering in the United States have shown in many directions a characteristic development. In the teaching of pure mathematics the effort has been to advance the student rapidly and put him as early as possible in possession of the methods of the higher mathematics. In the teaching of mechanics these methods are freely used in an elementary form, and the most rudimentary conceptions of the science are set forth with all the pomp and circumstance of differential coefficients and signs of integration.

This is not the place to comment upon the pedagogic vices of the American system. It is alike impotent to secure in its adherents a vigorous hold upon geometrical principles, and unable to produce a body of expert analysts. It has contributed no little to that thinly veiled contempt with which the American engineer regards the body of mathematical science, in spite of the fact that he does not hesitate to apply with undiscriminating faith many a result borrowed from the geometer. But if a student is to pursue this ill-chosen road, he could scarcely ask for a more competent and clear-sighted guide than Professor Ziwet.

The little treatise of 181 pages before us is the first third of a work composed especially to carry out this American system of instruction. It is devoted to Kinematics, the succeeding parts of the work being given, one to Statics, the other to Kinetics. It takes up in order the purely geometrical propositions upon the motions of translation and rotation; the kinematics of rectilineal translation and pure rotation; the kinematics of the curvilinear motion of the particle; and the elementary kinematics of the rigid body. The treatment is in the main analytical and usually concise and elegant. About 160 well-chosen exercises illustrate the methods of the text. The bibliographical references will be useful to the more advanced student.

Besides the necessary fundamental propositions such interesting questions are studied as harmonic motions, simple and compound; projectile motion in vacuo; the planetary motions; the simple pendulum; and the elementary properties of linkages. The kinematics of the rigid body is treated meagrely but with fullness adequate for the ordinary engineering student.

While there is much to commend, we cannot withhold our conviction that a different method would promote the soundness of our scientific culture. Treatises composed upon this plan mingle the simple and the complex without regard to the proper sequence of easy and difficult in educational work. The sober common sense of our English cousins goes at the business in the other way and promises better results. W. M. T.

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* An Elementary Treatise on Theoretical Mechanics, by Alexander Ziwet. New York, Macmillan & Co., 1893.